REMARKS

Claims 1, 6, 7, 9 and 11-35 were pending. Claim 35 has been amended. No claims have been added or cancelled. Claims 1, 6, 7, 9 and 11-35accordingly remain pending in the application subsequent entry of the present amendment.

Walker Reference

Claims 1, 6, 7, 9, and 11-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Walker, et al. (US 6,397,193) in view of Bieganski, et al. (US 6,412,012). In Applicant's prior Response dated April 23, 2008, Applicant provided a statement that at the time the invention was made, the subject matter of present application and the Walker patent were both owned by or subject to an obligation of assignment to the same assignee. However, in the present Office Action, the Walker reference is again applied and Applicant's statement pertaining to common ownership was not accepted. As discussed by the below signed representative with the Examiner during a telephone interview on September 24, 2008, Applicant submits this is improper. Applicant noted during the interview that under the rules, applications and references (whether patents, patent applications, patent application publications, etc.) will be considered by the examiner to be owned by, or subject to an obligation of assignment to the same person, at the time the invention was made, if the applicant(s) or an attorney or agent of record makes a statement to the effect that the application and the reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same person. (MPEP 706.02(l)(2) Establishing Common Ownership or Joint Research Agreement). Applicant did in fact make such a statement and repeats such statement herein. Accordingly, Applicant submits the Walker reference is not available for rejections under 35 U.S.C. § 103(a) and withdrawal of the rejections based upon the Walker reference be withdrawn.

35 U.S.C. § 112 Rejections

Claim 35 stood rejected under 35 U.S.C. §112 as failing to comply with the written description requirement. Applicant respectfully traverses this rejection. In Applicant's prior Response, a typographical error was inadvertently included in the referenced support for the subject matter of claim 35. Support for the claimed subject matter may be found in at least page 24, beginning at line 24. Included therein is a discussion regarding application of a system (e.g., an upsell system) within one environment and applying what has been learned to other environments (e.g. "upsell optimization strategies developed in a QSR may be employed within other industries such as in other retail settings").

In the present Office Action, it is suggested the features concerning the recited analyzing, identifying, and applying to the second environment are not supported. While Applicant does not agree, Applicant has nevertheless amended claim 35. Claim 35 now recites the features adapting and applying the trained offer generation system to ~~the~~ an identified second environment which are believed clearly supported by at least the above referenced disclosure. Accordingly, Applicant believes claim 35 is in compliance with 35 U.S.C. § 112.

35 U.S.C. § 102 Rejections

Claim 34 stand rejected under 35 U.S.C. §102(e) as being anticipated by Fayyad, et al. (US 6,643,645). Applicant traverses this rejection.

It is first noted that claim 34 recites the features "initializing an offer generation system, the offer generation system comprising at least one of a genetic algorithm or a genetic program to generate offers." Such features are wholly absent from Fayyad. On page 3 of the present Office Action, various disclosures of Fayyad are cited for claim 34. The cited disclosures include "fig. 3-6, col. 2 lines 57-67, col. 5 lines 13-63, col. 6 line 13

to col. 7 line 46". Applicant has reviewed each of these disclosures, as well as the entirety of Fayyad, and submits there is no disclosure or suggestion anywhere therein of an "offer generation system comprising at least one of a genetic algorithm or a genetic program to generate offers." Fayyad only makes reference to an "algorithm" ("An algorithm is here, and generally, conceived to be a self-consistent sequence of steps leading to a desired result."; col. 2, lines 64-66). However, nowhere is there any disclosure of a genetic algorithm or genetic program. Further, there is no disclosure or suggestion of any kind of learning system in Fayyad. Accordingly, Applicant submits Fayyad does not anticipate claim 34 for at least these reasons.

In addition, in Applicant prior Response dated April 23, 2008, Applicant noted that Fayyad does not disclose or suggest at least the features "establishing a threshold criteria for activation of the offer generation system" as recited in the claim. In the present Office Action (Response to Arguments, page 10), the examiner cites paragraph 43 of the publication version of the present application and appears to suggest that based upon that disclosure the term "threshold" for purposes of claim 34 is defined to be "a condition set for providing an offer. In particular, the rejection states:

> "Examiner would like to point out that a "'threshold" according to applicant disclosure is a condition set for providing an offer (see [0043]). Applicant's specification teaches "each "classifier" comprises a "condition and an "action" that is similar to an "if-then" rule. That is if the condition is met (e.g., certain items are ordered in a certain day, at a certain time, by a certain customer, etc.), then the action is performed (e.g.; a customer is offered an upsell offer, a dynamically-priced upsell offer, a suggestive sell offer, a switch-and-save offer, a cross-subsidy offer or any other offer".

It is not clear to the Applicant why the above disclosure was selected to define "threshold" for purposes of claim 34. The above disclosure pertains to matching of bit streams to classifiers which generally deals with rule/offer generation. In contrast, claim 34 is generally directed to the operation of an offer generation system as a background process. Upon reaching some (e.g., desired) level of performance (i.e., a threshold level of performance), the offer generation system may automatically self activate. The subject

matter of claim 34 is more generally described by the following disclosure of the present application:

> "The foregoing description discloses only exemplary embodiments of the invention, modifications of the above disclosed apparatus and method which fall within the scope of the invention will be readily apparent to those of ordinary skill in the art. For instance, the process 400 and/or the process 600 initially may be run in the background at a store or restaurant to "train" the server 24. In this manner, the server 24 (via the process 400 and/or the process 600) may automatically learn the resource distributions and resource associations of the store/restaurant through observation using unsupervised learning methods. This may allow, for example, a system (e.g., the server 24, an upsell optimization system, etc.) to participate in an industrial domain, brand, or store/restaurant without prior knowledge representation. As transactions are observed, the performance increases correspondingly. This observation mode (or "self-learning" mode) may allow the system to capture transaction events and update the weights associated with a neural network until the system has been sufficiently trained. The system may then indicate that it is ready to operate and/or turn itself on." (Description, paragraph beginning page 23, line 28).

As seen from the above disclosure, an embodiment is described wherein the process may be run in the background. At some point in time, such as when the system has been sufficiently trained, the system may turn itself on. That the system may determine when it has been sufficiently trained, implies some "threshold" condition (e.g., has reached some desired performance level) may be met. Nowhere does Fayyad disclose or suggest at least the features "running the offer generation system as a background process in a given environment, whereby the offer generation system is trained to make offers in the given environment; and the offer generation system automatically self activating, in response to detecting the threshold criteria is met." Such features are wholly absent from the cited art and Applicant's comments in this regard provided in the Response dated April 23, 2008, are repeated and incorporated herein by reference.

In the present Office Action, the Examiner provides additional comments (page 11) concerning how Fayyad may be seen to disclose these features.

> "Fayyad also teaches reducing data until a predetermined accuracy threshold or predetermined performance requirement is met then the reduced data is provided to the Page 11 recommender system which generates prediction based thereon, and based on query (see col. 1 lines 47-63)."

However, this disclosure of Fayyad simply teaches reducing data until some accuracy is achieved prior to providing the data to the recommender system. There is no disclosure here concerning running of an offer generation system as a background process and automatically self activating when some threshold criteria is met. In Fayyad, the recommender is fully operational at all times and does not operate as a background process whereby the offer generation system is trained to make offers in the given environment until some threshold criteria is met.

Also cited as disclosing the above features is the following from Fayyad:

> "In 502, the data is provided to a recommender system, so that the system can generate recommendations based on a query provided thereto as well as on the data as reduced. The recommendations are also referred to as predictions. Where the data is organized into records and dimensions, such that the query comprises effectively another record--a number of dimensions, for example--then the predictions themselves comprise a number of dimensions as well. For example, where the records correspond to users, and the dimensions correspond to individual web sites (erg., a binary yes or no as to whether a given user has visited a particular web site), then a query may be those web sites already visited by a user, such that the predictions are those web sites that the user may also likely visit, too. The invention is not limited to a particular recommender system, as can be appreciated by those of ordinary skill within the art. (see col. 8 lines 29..44)."

Applicant simply cannot agree the above disclosure teaches or suggests the features "running the offer generation system as a background process in a given environment, whereby the offer generation system is trained to make offers in the given environment; and the offer generation system automatically self activating, in response to detecting the threshold criteria is met." Applicant believes Fayyad is clear as to what it is

directed – and it does not disclose or suggest the features of claim 34. In particular, Fayyad describes:

> "The principal notion is to reduce data requirements of existing recommender engines by performing a type of data reduction that minimizes the loss of information given the engine." (Abstract).

> "Recommender systems have traditionally been based on memory-intensive techniques, where it is assumed the data or a large indexing structure over them is loaded into memory. Such systems, for example, are used by Internet web sites, to predict what products a consumer will purchase, or what web sites a computer user will browse to next. With the increasing popularity of the Internet and electronic commerce, use of recommender systems will likely increase.

> A difficulty with recommender systems is, however, that they do not scale well to large databases. Such systems may fail as the size of the data grows, such as the size of an electronic commerce store grows, the inventory grows, the site decides to add more usage data to the prediction data, etc. This results in prohibitively expensive load times, which may cause timeouts and other problems. The response times may also increase as the data increase, such that performance requirements begin to be violated. For these and other reasons, therefore, there is a need for the present invention." (Col. 1, lines 25-44).

> "The invention relates to retrofitting recommender systems, so that they can, for example, scale to voluminous data. . . .In one embodiment, a method first repeats reducing the data by a number of records, until a predetermined accuracy threshold or a predetermined performance requirement is met. If the accuracy threshold is met first, then the method repeats removing a highest-frequency dimension from the data, until the performance requirement is also met. The reduced data is provided to the recommender system, which generates predictions based thereon, and also based on a query. . . .." (Summary of the Invention).

Fayyad is not generally directed to particulars of the discussed recommender system at all. Rather, Fayyad is directed to reducing the amount of data fed to a recommender system. Given that reductions in data may result in a loss of performance, and a minimum threshold of accuracy and/or performance may be desired, reductions in

data may be correspondingly limited. However, nowhere is there any disclosure or suggestion concerning the features of claim 34. Therefore, for at least these further reasons claim 34 is not anticipated by Fayyad.

Claim 35 stood rejected under U.S.C. 102(e) as being anticipated by Bieganski, et al. (US 6,412,012). As discussed above, while Applicant does not agree with the rejection, claim 35 has been amended to read as follows:

"A method for applying a trained offer generation system, the method comprising:
applying an offer generation system within a first environment;
training the offer generation system within the first environment to create a trained offer generation system which is optimized for use in the first environment;
adapting and applying the trained offer generation system to an identified second environment."

In the present Office Action, it is suggested the Bieganski discloses "training the offer generation system within the first environment to create a trained offer generation system which is optimized for use in the first environment" . . . and applying the trained offer generation system to an identified second environment." In particular, col. 19, line 19 – col. 20, line 9 or Bieganski are cited. However, Applicant disagrees. This disclosure of Bieganski does not describe training of an offer generation system in a first environment and application to a second environment. In contrast, Bieganski simply describes one can incorporate the disclosed recommender system into various environment. For example, a recommender system may be applied within the context of a call center (Fig. 12). Alternatively, the recommender system may be applied within the context of a cash-register check-out system (Fig. 13). Other content areas are described as well – music, financial services, real estate, etc. However, each of these examples are distinct and simply represent various contexts within which the recommender system may be used. Bieganski does not, however, disclose or suggest training and optimizing an offer generation system in a first environment and adapting and applying the trained system in a second environment. Therefore, Applicant submits claim 35 is not anticipated by Fayyad for at least the above reasons.

35 U.S.C. § 103(a) Rejections

Claims 1, 6, 7, 9, and 11-26 stood rejected under U.S.C. 103(a) as being unpatentable over Walker, et al. (US 6,397,193) in view of Bieganski, et al. (US 6,412,012). As noted above, the Walker reference is not available for rejections under 35 U.S.C. § 103(a). Thus these rejections are moot.

Claims 27 and 33 stood rejected under U.S.C. 103(a) as being unpatentable over Bieganski, et al. (US 6,412,012) in view of Ross (US 6,477,571). Applicant traverses these rejections.

In the present Office Action, it is suggested the Bieganski discloses the features of claim 27 including "determining one or more expected rewards for each matching classifier." These features are nowhere mentioned in the rejection of claim 27 at pages 7-8. In the Response to Arguments on page 13 these features are listed; however, there is no discussion as to where or how such features are disclosed by the cited art. Rather, the rejection simply states:

> "Bieganski teaches providing a recommendation when a condition is met; generating an offer based on an algorithm and outputting the offer (see abstract, col. 3 lines l9-58, col. 7 lines 45-64, col. 10 lines 17-49)."

It is first noted that such a terse and conclusory statement provides no indication as to how Bieganski discloses the recited matching followed by "determining one or more expected rewards for each matching classifier." In addition, Applicant has reviewed each of the cited disclosures and can find no such features included therein. The Abstract of Bieganski simply describes a recommendation system and compatibility rules. Col. 3 describes a recommendation system, compatibility rules, and user preference data. Col. 7 describes recommendations may be based on outside sources or generated automatically. Finally, col. 10 generally discusses compatibility rules. Applicant submits the above

recited features are nowhere disclosed therein. Neither are such features found in Ross. For at least these reasons, Applicant submits a prima facie case of obviousness has not been established with regard to claim 27.

Claims 28-32 stood rejected under U.S.C. 103(a) as being unpatentable over Bieganski, et al. (US 6,412,012) in view of Ross (US 6,477,571) in further view of "Generalization in XCS", Stewart W. Wilson, submitted to ICML '96 Workshop on Evolutionary Computing and Machine Learning (hereinafter Wilson). Applicant respectfully traverses this rejection. As each of dependent claims 28-32 include the features of independent claim 27 on which they depend, each of the dependent claims are patentably distinct for at least the above reasons as well.

In light of the foregoing amendments and remarks, Applicants submit that all pending claims are now in condition for allowance, and an early notice to that effect is earnestly solicited.

If a phone interview would speed allowance of any pending claims, such is requested at the Examiner's convenience.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicant hereby petitions for such an extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/6124-00100/RDR.

Respectfully submitted,

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